

Claims

1. A process for making low ester pectin comprising the steps of: obtaining a starting pectin material, contacting the starting pectin material with a bio-catalyst capable of de-esterifying the starting pectin material, permitting the bio-catalyst to de-esterify the starting pectin material to produce a de-esterified pectin, and further de-esterifying said de-esterified pectin by contacting the de-esterified pectin with an acid or an alkali capable of de-esterifying and permitting the acid or alkali to further de-esterify said de-esterified pectin to produce a low ester pectin, wherein the de-esterified pectin under or after said further de-esterification optionally is amidated by contacting said de-esterified pectin with ammonia.
2. The process according to claim 1 wherein the bio-catalyst is permitted to de-esterify the starting pectin material to a degree of esterification below 60% before further de-esterifying said de-esterified pectin.
3. The process according to claim 1 wherein the bio-catalyst is permitted to de-esterify the starting pectin material to a degree of esterification between 60% and 30% before further de-esterifying said de-esterified pectin.
4. The process according to claim 1 wherein the bio-catalyst is permitted to de-esterify the starting pectin material to a degree of esterification between 45% and 30% before further de-esterifying said de-esterified pectin.
5. The process according to claim 1 wherein the bio-catalyst is permitted to de-esterify the starting pectin material to a degree of esterification between 45% and 40% before further de-esterifying said de-esterified pectin.
6. The process according to claim 1 wherein the bio-catalyst is permitted to de-esterify the starting pectin material to a degree of esterification of 42% before further de-esterifying said de-esterified pectin.

7. The process according to claims 1-6 characterized in that the bio-catalyst is selected from the group comprising pectin methyl esterase (E.C. 3.1.1.11).
- 5 8. The process according to claim 7 characterized in that the pectin methyl esterase (E.C.3.1.1.11) de-esterifies in a random way.
9. The process according to claim 7 characterized in that the pectin methyl esterase (E.C.3.1.1.11) de-esterifies in a block-wise way.
- 10 10. The process according to claims 1-9, wherein the biocatalyst de-esterified pectin material is further de-esterified with an acid and subsequently amidated by contacting said de-esterified pectin with ammonia.
- 15 11. The process according to claims 1-9, characterized in that the biocatalyst de-esterified pectin is further de-esterified by contacting the de-esterified pectin with ammonia and permitting the ammonia to further de-esterify said de-esterified pectin to produce an amidated pectin.
- 20 12. An amidated pectin obtainable from a process according to claim 10 or 11, characterized by having a ratio,  $R_2$ , of intrinsic viscosity of the starting de-esterified pectin to the intrinsic viscosity of the amidated pectin ranging from 1.01 to 1.25.
- 25 13. The amidated pectin according to claim 12, characterized by having a ratio,  $R_2$ , of intrinsic viscosity of the starting de-esterified pectin to the intrinsic viscosity of the amidated pectin ranging from 1.03 to 1.18.
- 30 14. The amidated pectin according to claim 12, characterised by having a ratio,  $R_2$ , of intrinsic viscosity of the starting de-esterified pectin to the intrinsic viscosity of the amidated pectin ranging from 1.04 to 1.15.

15. The amidated pectin according to claim 12 characterized by having a degree of esterification of 30% or less and a degree of amidation of 18% or less.
16. The amidated pectin according to claim 12, characterized by having a degree of esterification of 10-20% and a degree of amidation of 10-20%.
17. The amidated pectin according to claim 12, characterized by having a degree of esterification of 12-18% and a degree of amidation of 5-30%.
18. The amidated pectin obtainable from a process according to claims 1 – 11, characterized by displaying a Mark-Houwink factor, “a”, above 0.8:
19. The amidated pectin obtainable from a process according to claims 1 – 11, characterized by displaying a Mark-Houwink factor, “a”, in the range 0.8 – 1.0.
20. The amidated pectin obtainable from a process according to claims 1 – 11, characterized by displaying a Mark-Houwink factor, “a”, in the range 0.85 – 0.95.
21. The use of an amidated pectin according to claims 12 - 20 in foodstuffs.
22. The use of an amidated pectin according to claims 12 - 20 in jams and jellies.
23. The use of an amidated pectin according to claims 12 - 20 in dairy products.
24. The use of an amidated pectin according to claims 12 - 20 in pharmaceutical products.
25. The use of an amidated pectin according to claims 12 - 20 in personal care products.

26. The use of an amidated pectin according to claims 12 - 20 in household products.